

Table II. Viscosity of Isobutane

Pressure, P.S.I.A.	100° F.			160° F.			220° F.			280° F.			340° F.			400° F.			460° F.			
	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises	Density, g./cc.	Viscosity, micropoises		
14.7	0.0023	79	0.0021	86	0.0011	93	0.0017	101	0.0016	108	0.0016	115	0.0016	115	0.0016	115	0.0016	115	0.0016	115	0.0014	122
100	0.5378	1343(1358.4)	0.0159	91	0.0139	96	0.0155	106	0.0114	113(115.3)	0.0114	117	0.0114	117	0.0114	117	0.0114	117	0.0114	117	0.0097	123
165	0.5397	1362(1368.3)	0.4880	971(959.9)	0.0314	100	0.0314	107	0.0271	107(106.7)	0.0271	119	0.0242	119	0.0242	119	0.0242	119	0.0242	119	0.0201	126
200	0.5416	1379	0.4887	974(967.0)	0.0570	108	0.0570	111	0.0450	111	0.0450	117	0.0387	117	0.0387	117	0.0387	117	0.0387	117	0.0312	129
310	0.5435	1402(1401.7)	0.4950	1014(1002.2)	0.4218	661	0.4218	661(680.6)	0.4218	661	0.4218	661	0.4218	661	0.4218	661	0.4218	661	0.4218	661	0.4218	661
400	0.5448	1414	0.4976	1014(1002.2)	0.4276	681	0.4276	681(681.4)	0.4276	681	0.4276	681	0.4276	681	0.4276	681	0.4276	681	0.4276	681	0.4276	681
500	0.5464	1433(1449.3)	0.5003	1048	0.4404	733	0.4404	733(731.9)	0.4404	733	0.4404	733	0.4404	733	0.4404	733	0.4404	733	0.4404	733	0.4404	733
600	0.5496	1469(1478.4)	0.5054	1081(1069.5)	0.4506	777	0.4506	777(781.6)	0.4506	777	0.4506	777	0.4506	777	0.4506	777	0.4506	777	0.4506	777	0.4506	777
800	0.5528	1509(1514.1)	0.5099	1116(1106.3)	0.4588	818	0.4588	818(817.6)	0.4588	818	0.4588	818	0.4588	818	0.4588	818	0.4588	818	0.4588	818	0.4588	818
1250	0.5565	1549	0.5152	1154	0.4667	857	0.4667	857	0.4105	627	0.4105	627	0.4105	627	0.4105	627	0.4105	627	0.4105	627	0.4105	627
1500	0.5598	1594(1629.4)	0.5201	1194	0.4745	902	0.4745	902(901.7)	0.4745	902	0.4745	902	0.4745	902	0.4745	902	0.4745	902	0.4745	902	0.4745	902
1750	0.5629	1634	0.5248	1231	0.4811	937	0.4811	937	0.4340	716	0.4340	716	0.4340	716	0.4340	716	0.4340	716	0.4340	716	0.4340	716
2000	0.5653	1669(1670.6)	0.5287	1266(1259.0)	0.4884	973	0.4884	973(973.0)	0.4884	973	0.4884	973	0.4884	973	0.4884	973	0.4884	973	0.4884	973	0.4884	973
2500	0.5705	1750	0.5366	1341	0.4981	1041	0.4981	1041	0.4577	819	0.4577	819	0.4577	819	0.4577	819	0.4577	819	0.4577	819	0.4577	819
3000	0.5754	1829(1860.5)	0.5432	1401	0.5068	1107	0.5068	1107(1107.0)	0.5068	1107	0.5068	1107	0.5068	1107	0.5068	1107	0.5068	1107	0.5068	1107	0.5068	1107
3500	0.5804	1919	0.5489	1466	0.5149	1161	0.5149	1161	0.4806	941	0.4806	941	0.4806	941	0.4806	941	0.4806	941	0.4806	941	0.4806	941
4000	0.5852	1999(1983.1)	0.5542	1533(1518.4)	0.5222	1217	0.5222	1217	0.4905	1001(1008.0)	0.4905	1001	0.4905	1001	0.4905	1001	0.4905	1001	0.4905	1001	0.4905	1001
4500	0.5889	2074	0.5595	1598	0.5293	1274	0.5293	1274	0.4989	1055	0.4989	1055	0.4989	1055	0.4989	1055	0.4989	1055	0.4989	1055	0.4989	1055
5000	0.5926	2142(2125.8)	0.5639	1660	0.5350	1333	0.5350	1333(1344.8)	0.5350	1333	0.5350	1333	0.5350	1333	0.5350	1333	0.5350	1333	0.5350	1333	0.5350	1333
6000	0.5985	2275(2282.5)	0.5720	1784(1774.4)	0.5470	1453	0.5470	1453	0.5208	1215	0.5208	1215	0.5208	1215	0.5208	1215	0.5208	1215	0.5208	1215	0.5208	1215
7000	0.6063	2424	0.5795	1910	0.5560	1560	0.5560	1560	0.5318	1310	0.5318	1310	0.5318	1310	0.5318	1310	0.5318	1310	0.5318	1310	0.5318	1310
8000	0.6126	2550(2550.4)	0.5860	2030(2021.5)	0.5648	1670	0.5648	1670	0.5410	1400	0.5410	1400	0.5410	1400	0.5410	1400	0.5410	1400	0.5410	1400	0.5410	1400

RECOMMENDED VALUES

Recommended values for viscosity of isobutane for temperatures from 100° to 460° F. and pressures from atmospheric to 8000 p.s.i.a. are presented in Table II, which also shows experimental data in parentheses. The recommended values are believed to be within $\pm 2\%$ of the true isobutane viscosity values over the entire ranges of temperature and pressure reported. These values were determined from smoothed large-scale viscosity-temperature, and residual viscosity-density plots based on the authors' experimental data.

The density values presented in Table II are those of Sage and Lacey for pressures up to 5000 p.s.i.a. The densities for higher pressures were read from large-scale density-pressure plots in which smooth isotherms connecting Sage and Lacey's data and the experimental values at 8000 p.s.i.a. were drawn. The 400° and 460° F. isotherms were extended to 8000 p.s.i.a. with large-scale cross-plots of density-temperature. The resulting densities were checked further by comparing viscosities obtained from the residual plot with those values giving smooth curves in the viscosity-pressure and viscosity-temperature plots. The densities obtained are believed to be within $\pm 5\%$ of true isobutane density values.

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